REMARKS UNDER 37 C.F.R. 1.111

Reconsideration and allowance are respectfully requested.

The amendments proposed in this Response address the Drawing issues on pages 2-3 of the office action. Antecedence for the amendments exists on page 6, first paragraph of the original specification. No new matter has been added. Entry and withdrawal are requested.

The Examiner's requirement in paragraph 1, page 2 of the office action is not understood. Applicant has already included the provisional priority application data on page 1, paragraph 1 of the original specification. Clarification is requested.

Claims 1-6, 15, 17-25, 28, 29, 31, 36, and 47 are patentable over Lurz.

Lurz describes a system which uses plural sensors 1, 3, 4, and vibration transmitters 2 on the surface 5 of a body 6 over which flow passes. Lurz mandates that the transmitters 2 be positioned between the sensors 1, 3, 4, and following each of the sensors for measuring the degree of turbulence along the flow path from sensors 1 to 3 to 4 and over transmitters 2 between each of two adjacent sensors (see column 3, lines 48-68, to column 4, lines 1-12), where the transmitters are to be disposed one behind the other (column 4, lines 28-43).

Lurz further provides that the transmitters receive periodic analyzer control signals after the sensors 1, 3, 4, relay measurements to the analyzer control circuits 7. Lurz further teaches that once the turbulence floe measurements are made and

signals relayed to the transmitters then the sensor-transmitter combined system may be positioned as shown in Figure 3. In laminar boundary layers 8 the combined systems are arranged for dampening vibrations, in the turbulent boundary layer 9 they are arranged for reducing degree of turbulence and wind shearing stress and in the turbulent layer 10 further down from layer 9 they are arranged for increasing the degree of turbulence and increasing energy supply (see column 4, lines 44-65).

Nowhere in the entire Lurz reference there is a description, teaching or suggestion of conforming the skin elements responsive to signals received from the same skin elements as uniquely defined by the present invention. The present invention is a conformable skin element system comprising one or more conformable skin elements, a controller, connections for coupling the conformable skin elements and the controller, a feedback control loop for generating and transmitting signals between the skin elements, the controller and the connections for conforming the skin elements to desired deformations. The skin elements may be adapted for active vortex control by mounting on a surface and forming a pressure transducer and flow modifier on the surface.

Nothing in Lurz describes each and every claimed element. Therefore, Lurz cannot anticipate nor render obvious the present invention. For an invention to be anticipated, it must be demonstrated that each and every element of the claimed invention is present in the "four corners" of a single prior art, either expressly described therein or under the principle of inherency.

Lewmar Marine Inc. v Barient Inc., 3 USPQ2d 1766, 1767-1768 (CAFC, 1987). The absence from prior art reference any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible, Inc., 230 USPQ 81, 84 (Fed. Cir. 1986).

Claims 26, 27, 32, and 41-46 are patentable over Lurz and Blackwelder.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Blackwelder has been relied on as teaching piezoelectric material. In Figure 7 Blackwelder teaches that the airfoil 21 with piezoelectric array 22 be embedded in the leading edge of the body and airfoil 21. That teaching contradicts the airfoil arrangement taught by Lurz which requires alternate sensor and transmitter arrangement and disposing of the Lurz air foils along the entire length of the body. Therefore, Blackwelder cannot be combined with Lurz because they are mutually contradictory teachings. Thus, the present claims cannot be rendered obvious with teachings of references that inherently are inapposite.

The courts have held, when the prior art contains apparently conflicting references, [the Board] must weigh each reference for its power to suggest solutions to an artisan of ordinary skill. In weighing the suggestive power of each reference, [the Board] must consider the degree to which one reference might discredit another. In re Young, 18 USPQ2d 1089, 1091 (CAFC, 1991).

Claim 7 is patentable over Lurz and Mangalam.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Mangalam has been relied on as teaching amplifiers and filters. Given Lurz's teachings of measuring boundary layer degrees of turbulence and accordingly positioning the combined sensor-transmitter systems, there is no showing as to why one of ordinary skill in the art would be motivated to amplify and filter the signals either received from the Lurz sensors or sent to the Lurz transmitters. Of course, such a teaching can be garnered from hindsight reconstruction using the present invention as a guide. However, such reconstruction cannot form a basis for any obviousness holding.

"It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." In re Fritch, 23 USPQ2d 1783, 1784 (CAFC, August 1992), quoting from In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). "This court has previously stated that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." **Id.** quoting from In re Fine, 5 USPQ2d 1600 (CAFC, 1988).

Claim 30 is patentable over Lurz and McKillip.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

McKillip has been relied on as teaching actuatable materials such as shape memory alloys. The Examiner then replaces the Lurz transmitters 2 with the alloys of McKillip to hold claim 30 to be obvious. The Examiner's modification does harm to the carefully designed Lurz device which mandates the adjacent positioning of the Lurz sensors and the Lurz transmitters, particularly the transmitters to be positioned one after another adjacent to the sensors. Lurz mandates that pattern even in the airfoil configuration. Therefore, it is not understood as to why one of ordinary skill would do harm to the Lurz device which would only function if designed according to teachings in that reference and replace it with the McKillip alloy without benefit of such a teaching from either of those references.

That [the prior art] might incorporate elements which could be used in appellants' system does not render appellants' claims obvious when there is no suggestion of using these elements in substantially the same manner as appellants use them. In re Donovan, 184 USPQ 414, 421 (CCPA, 1975).

Claims 37 and 40 are patentable over Lurz and Wygnanski.

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

Wygnanski has been relied on as teaching actuatable material mountable as a cantilever. However, that contradicts the Lurz mandated mounting of the combined sensor-transmitter system along the body for controlling turbulence and wind shearing stress.

Citing In re Gordon, 221 USPQ, 1127, the court pointed out, "the mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification". In re Fritch, 23 USPQ2d 1783, 1784 (CAFC, August 1992). In the same case, In re Gordon, the court found a proposed modification inappropriate for an obviousness inquiry when the modification rendered the prior art reference inoperable for its intended purpose.

Claims 33-35 are patentable over Lurz and the admitted prior art (page 7).

As previously pointed out, Lurz does not teach nor suggest the claimed invention. Any further combination would also therefore lead away from the present claims.

That [the prior art] might incorporate elements which could be used in appellants' system does not render appellants' claims obvious when there is no suggestion of using these elements in substantially the same manner as appellants use them. In re Donovan, 184 USPQ 414, 421 (CCPA, 1975).

In any case, this rejection is rendered moot due to the amendments to the claims.

Nothing in the references, either singly or in combination, teaches or suggests the claimed features. Therefore, the references cannot anticipate nor render obvious the present invention as claimed.

Since Applicant has presented a novel, unique and non-

obvious invention, reconsideration and allowance are respectfully requested.

Respectfully,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Kindly amend the following claims:

34. (Amended) The apparatus of claim 33, wherein the additional pressure transducers are [surface mounted taps] additional layers of the skin element.

35. (Amended) The apparatus of claim 33, wherein the additional pressure transducers are [manometers] multiple single layers of the skin element.